

REMARKS

Claims 1-20 are pending, while claims 1-8 are withdrawn from consideration and claims 9-19 are rejected to. Applicants acknowledge that claim 20 is objected to but has been indicated as being allowable but for its dependence on a rejected base claim. Applicants cordially thank the Examiner for indication of the same. Claims 9, 10, 16, and 19 have been amended, leaving claims 9-20 for consideration upon entry of the present amendment. No new matter has been added.

Election/Restrictions

Applicants affirm election with respect to claims 9-20 for further prosecution on the merits while claims 1-8 are withdrawn from further consideration by the Examiner.

Claim Rejections -35 USC §102

Claims 9-20 stand rejected under 35 U.S.C. §102(b) as being anticipated by Olson et al. (U.S. Patent No. 5,707,000). Applicants respectfully traverse.

The Examiner alleges that "Olsen et al. teach an apparatus for removing a chip having a shearing element configured to apply a loading force (fig. 3, item 55); a fixture having a loading element for placing the substrate (fig. 3, item 65), wherein the solder connections intermediate the chip and the substrate are heated to a predetermined temperature by applying a heat source of a surface of the substrate distal from the chip (col. 8, 11. 1-10, where the furnace would necessarily apply heat to the surface of the substrate distal from the chip); the substrate is loaded onto a seat in an upper element with the chip extending through a window (fig. 3, item 67 and area supporting item 60); the shearing element is releasably clamped to the chip using a drive screw to operate the claws that clamp edges defining the chip (fig. 3, items 51, 59, and 67);"

(Emphasis added.)

To anticipate a claim under 35 U.S.C. § 102, a single source must contain all of the elements of the claim. *Lewmar Marine Inc. v. Barient, Inc.*, 827 F.2d 744, 747, 3

U.S.P.Q.2d 1766, 1768 (Fed. Cir. 1987), *cert. denied*, 484 U.S. 1007 (1988). Moreover, the single source must disclose all of the claimed elements **"arranged as in the claim."** (Emphasis added). *Structural Rubber Prods. Co. v. Park Rubber Co.*, 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

It is respectfully noted that Olson et al. teach with respect to Figures 3A, 3B, and 3C upon which the Examiner relies that a **bi-metallic clamp design** is used to remove a chip 20, from a device or chip carrier 60. A first bi-metallic clamping means 57, is secured to a chip separating or removing means 55, such as a weight 55, by retaining means 51, such as, pins, screws, etc., to name a few. Therefore, one edge 24, of the chip 20, is held securely in place by the ledge or lip 59, of the removing weight 55, while a second edge 24, is held in place by the clamping means 57. Col. 7, lines 22- 30. The clamping means 57, is typically away from the peripheral edge 24, of the chip 20, but when it is heated the clamping means 57, moves closer and makes good physical contact with at least a portion of the peripheral edge 24. Col. 7, lines 31-34.

The separating means rests on a second bi-metallic strip 69 before heating thereof, as more clearly shown in FIG. 3A. Upon heating the second bi-metallic strip 69, the strip 69 collapses, as more clearly shown in FIG. 3B, and leaves the separating means 55, clinging on to the chip 20. Col. 7, lines 43-48.

This bi-metallic clamping method achieves **clamping of the device** utilizing a bi-metallic spring 57, to clamp the device or chip 20, **when the temperatures are increased**. The clamping force is achieved by deflection of the bi-metal strip 57, which exerts force on the device or chip 20. Once the mechanism is attached to the device 20, the entire assembly is loaded into a reflow furnace and where at an **elevated temperature the bi-metallic strip 57, clamps onto the device 20**, while the second bimetallic strip 69, holds the block 55, in place. A further increase to liquidus temperature causes tautness of the second bimetallic strip 69, and at liquidus the gravitational force on the bi-metal mechanism overcomes the force of solder surface tension and thereby device removal is accomplished. Col. 7, line 62 – Col. 8, line 10. Thus, the bimetallic clamp 57 requires an elevated temperature in order to clamp chip 20.

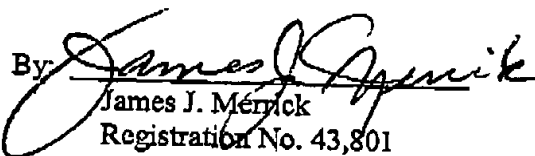
Olson et al. does not teach or suggest, wherein the shearing element is releasably clamped to the semiconductor device using a drive screw to operate a plurality of claws that clamp edges defining the chip, as in amended claim 9 and similarly claimed in claim 16. Thus, independent claims 9 and 16, including claims depending therefrom, i.e., claims 10-15 and 17-23, define over Olson et al.

Conclusion

In view of the foregoing, it is respectfully submitted that the instant application is in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and a Notice of Allowance issued.

In the event the Examiner has any queries regarding the presently submitted response, the undersigned respectfully requests the courtesy of a telephone conference to discuss any matters in need of attention. No new matter has been entered and no additional fees are believed to be required. However, if any fees are due with respect to this Amendment, please charge them to Deposit Account No. 09-0458 maintained by Applicants' attorneys.

Respectfully submitted,

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